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EXAMINER	
AHMED, SALMAN	

ART UNIT	PAPER NUMBER
2616	

SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE
3 MONTHS	04/19/2007	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

Office Action Summary	Application No.	Applicant(s)	
	09/784,499	MAKAM ET AL.	
	Examiner	Art Unit	
	Salman Ahmed	2616	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *1/24/2007*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-28 and 30-38* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-28 and 30-36* is/are rejected.

7)☒ Claim(s) *37 and 38* is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *15 February 2001* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Claims 1-28 and 30-38 are pending.

Claims 1-28, 30-36 are rejected.

Claims 37 and 38 are objected to.

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

2. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

3. Claims 1-26 are rejected under 35 U.S.C. 103(a) as being unpatentable over Moy et al. (US 2003/0035411, hereinafter Moy) in view of Sandstrom (US 6,697,373)

Regarding claims 1 and 14, Moy discloses an optical transport network (Figure 2, page 4, paragraph [0048], OTN) that includes a plurality of transport network devices (Figure 2, page 4, paragraph [0048], TNDs) that comprise optical cross-connects (Figure 2, page 4, paragraph [0048], OXCs) and add/drop multiplexers (Figure 2, page 4, paragraph [0048], ADMs). Moy also discloses that dynamic bandwidth provisioning on OTNs is possible through the use of network management control systems (paragraph [0005]). Moy discloses that an optical trail is a connection between two interfaced user devices (IUDs) that includes two TNDs connected to the IUDs on either side of the connection (page 5 paragraph [0056]). The two TNDs meet the limitations of the first and second switching circuits of the present invention. An IUD (14) sends a trail creation signal to TND (46), which in turn is sent to TND (48) (page 8 paragraph [0104]). This meets the limitation of a network management system issuing a connection create request and sending this request to the first switching circuit. The size of the connection to be created is indicated in the trail creation signal (page 8 paragraph [0110]), which indicates the resources that need to be reserved. Moy discloses that optical trail signals are transmitted in accordance with an extension to known protocols such as Resource Reservation Setup Protocol (RSVP) (page 8 paragraph [0102]). RSVP is well known in the art to include Path Messages to setup a connection, thus Moy also discloses the transmission of a trail creation signal from the first switching circuit to the second switching circuit using a path setup message. Moy discloses that a user device is configured to send out a modification signal requesting the modification of the bandwidth characteristic of an existing optical trail (page 10, paragraph [00152]). Moy

discloses first switching circuit included in-a-SONET communication network having at least three switching circuits (figure 2 elements 40, 42, 44, 46 and 48 and page 4 paragraph [0048], a plurality of transport network devices (TNDs) that comprise optical cross-connects (OXCs) and add/drop multiplexers (ADMs)). Moy further discloses connection modify command (page 4 section 0152, non-destructive modify signal) being formed by network management system without determination usage statistics for all of switching circuits in SONET communication network (page 4 section 0152-0153, A modify signal requests the TNC to modify a bandwidth characteristic of an existing optical trail. For example, the modification signal requests that the TNC decrease an amount of bandwidth provisioned for an optical trail, or change the priority of an optical trail in relation to other connections. The TNC may be configured to grant the requested modification by either changing the existing optical trail in accordance with the request or by deleting the existing optical trail and creating a new optical trail according to changes specified by the modification signal).

Moy fails to expressly disclose the reservation of virtual concatenated resources in modifying an existing connection.

Sandstrom in the same field of endeavor discloses the dynamic adjustment of SDH/SONET connections by adding or removing the paths formed of virtual-concatenated paths (col. 2, lines 59-65).

At the time the invention was made, it would have been obvious to a person of ordinary skill in the art to dynamically adjust the bandwidth of the optical trails in the invention of Moy by adding or removing virtual-concatenated paths as taught by

Sandstrom. One of ordinary skill in the art would have been motivated to do this in order to transport the packets as efficiently as possible in terms of the required bandwidth.

Regarding claims 12 and 25, Moy fails to expressly disclose that the switching circuits comprise buffers for accommodating differential delays in data processing.

Sandstrom in the same field of endeavor discloses packet terminals (PTs) that operate as ADMs and comprise buffers for switching traffic of different traffic priority classes (col. 6, line 30 – col. 7, line 28).

At the time the invention was made, it would have been obvious to a person of ordinary skill in the art to include buffers in the TNDs of the invention of Moy as taught by Sandstrom. One of ordinary skill in the art would have been motivated to do this in order to process data of a connection of a higher priority class while holding data for a connection of lower priority.

Regarding claims 2, 3, 15 and 16, Moy discloses that the TNDs being ADMs or OXCs, wherein a TND is capable of converting between optical and electrical signals, processing electrical signals, and converting between electrical and optical signals (paragraph [0048]).

Regarding claims 4 and 17, Moy discloses that the OTN being a SONET or SDH network (paragraph [0045]).

Regarding claims 5 and 18, Moy discloses that the signaling protocol being carried out-of-band (paragraph [0123]).

Regarding claims 6, 7, 19 and 20, Moy discloses using the RSVP signaling protocol (paragraph [0102]).

Regarding claims 8 and 21, Moy in view of Sandstrom fails to expressly disclose first and second acknowledge messages. However, Moy does disclose using RSVP (paragraph [0102]), which is well known in the art to use acknowledge messages to verify communications. At the time the invention was made, it would have been obvious to a person of ordinary skill in the art to send an acknowledgement after receiving the trail creation signal in the invention of Moy. One of ordinary skill in the art would have been motivated to do this in order to verify that the signal was received.

Regarding claims 9 and 22, Moy discloses that the transport network controller, which is a TND, notify the requesting device that an optical trail has been created (paragraph [0144]).

Regarding claims 10, 11, 23 and 24, Moy discloses specifying the size of a connection by using STS-1 as a metric (paragraph [0110]). As is well known in the art, the STS-1 data structure comprises virtual tributaries (VTs). Also, Moy discloses that the bandwidth of a connection be modified so as to increase the bandwidth capacity (paragraph [0152]), which translates to a multiple of STS-1.

Regarding claims 13 and 26, Moy discloses that the trail creation signal include a group ID and group position (paragraphs [0106]-[0107]; see also Figure 7).

4. Claims 32, 34, 35 and 36 are rejected under 35 U.S.C. 103(a) as being unpatentable over Moy in view of Jakobik et al. (US PAT 6195367, hereinafter Jakobik).

In regards to claim 32, Moy discloses a communication system (Figure 2, page 4, paragraph [0048], OTN) including a network management system (paragraph [0005]); optical cross-connect (Figure 2, page 4, paragraph [0048], OXCs) in communication with the network management system; a synchronous optical network (Figure 2, page 4, paragraph [0043 and 0048], OTN) including a first add/drop multiplexer (Figure 2, page 4, paragraph [0048], ADMs) and a second add/drop multiplexer (Figure 2, page 4, paragraph [0048], ADMs), the synchronous optical network in communication with the optical cross-connect. Moy teaches the network management system uses the optical cross-connect to initiate a connection create command at the first add/drop multiplexer; wherein the first add/drop multiplexer reserves resources for the connection in response to the connection create command, wherein the optical cross-connect then transmits a path setup message to the second add/drop multiplexer using the synchronous optical network to establish a path between the first add/drop multiplexer and the second add/drop multiplexer (page 5 paragraph [0056], an optical trail is a connection between two interfaced user devices (IUDs) that includes two TNDs connected to the IUDs on either side of the connection. The two TNDs meet the limitations of the first and second ADMs of the present invention. IUDs is the optical cross connect (section 0042, A UD may be an IP router such as the M40/M160 available from Juniper, Networks, Inc. of Sunnyville, Calif., an ATM switch such as the GX550 available from Lucent Technologies of Murray Hill, N.J., an ADM such as the DDM available from Lucent Technologies of Murray Hill, N.J., or an OXC such

as the SN 16000 available from Sycamore Networks of Chelmsford, Mass). An IUD (14) sends a trail creation signal to TND (46), which in turn is sent to TND (48) (page 8 paragraph [0104]). This meets the limitation of a network management system issuing a connection create command and sending this request to the first ADM and to the second ADM via UDI. The size of the connection to be created is indicated in the trail creation signal (page 8 paragraph [0110]), which indicates the resources that need to be reserved)).

Moy does not explicitly teach DCS or digital-cross-connect in addition to OXCs being using to setup path between ADMs.

Jakobik in the same field of endeavor teaches using DCS or digital-cross-connects (Figure 4, DSC 19) as a path connecter between ADMs in addition to OXCs (column 8 lines 5-10, Signals carrying termination traffic between the express rings 4, 5 and the DCS switch 19 can also be switched directly between the nodes 2, 3 and the DCS switch 19).

It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify Moy's system/method by incorporating the steps of using DCS switches in addition to OXCs to connect ADMs as suggested by Jakobik. The motivation is that (as suggested by Jakobik, column 3 lines 21-40) using DCS in addition to OXCs to connect Optical Nodes allows the CO to better utilize bandwidth incorporating signal type of both the low bandwidth per port and high number of ports that characterize DCS switches, and the high bandwidth per

port and low number of ports that characterize OXC switches; thus making the network efficiently utilize it's bandwidth as per signal requirements.

In regards to claim 34, Moy teaches Optical cross connect launching path setup message to the second add-drop multiplexer.

Moy does not explicitly teach DCS or digital-cross-connect in addition to OXCs being using to setup path between ADMs.

Jakobik in the same field of endeavor teaches using DCS or digital-cross-connects (Figure 4, DSC 19) as a path connecter between ADMs in addition to OXCs (column 8 lines 5-10, Signals carrying termination traffic between the express rings 4, 5 and the DCS switch 19 can also be switched directly between the nodes 2, 3 and the DCS switch 19).

It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify Moy's system/method by incorporating the steps of using DCS switches in addition to OXCs to connect ADMs as suggested by Jakobik. The motivation is that (as suggested by Jakobik, column 3 lines 21-40) using DCS in addition to OXCs to connect Optical Nodes allows the CO to better utilize bandwidth incorporating signal type of both the low bandwidth per port and high number of ports that characterize DCS switches, and the high bandwidth per port and low number of ports that characterize OXC switches; thus making the network efficiently utilize it's bandwidth as per signal requirements.

In regards to claim 35 Moy teaches the second add/drop multiplexer sends a path acknowledge (Moy discloses using the RSVP signaling protocol (paragraph

[0102]). RSVP (paragraph [0102]) use acknowledge messages to verify communications) to the optical cross-connect once the second add/drop multiplexer has reserved resources (The size of the connection to be created is indicated in the trail creation signal (page 8 paragraph [0110]), which indicates the resources that need to be reserved) for the connection specified by the path setup message (Moy discloses that an optical trail is a connection between two interfaced user devices (IUDs) that includes two TNDs connected to the IUDs on either side of the connection (page 5 paragraph [0056])).

Moy does not explicitly teach DCS or digital-cross-connect in addition to OXCs being using to setup path between ADMs.

Jakobik in the same field of endeavor teaches using DCS or digital-cross-connects (Figure 4, DSC 19) as a path connecter between ADMs in addition to OXCs (column 8 lines 5-10, Signals carrying termination traffic between the express rings 4, 5 and the DCS switch 19 can also be switched directly between the nodes 2, 3 and the DCS switch 19).

It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify Moy's system/method by incorporating the steps of using DCS switches in addition to OXCs to connect ADMs as suggested by Jakobik. The motivation is that (as suggested by Jakobik, column 3 lines 21-40) using DCS in addition to OXCs to connect Optical Nodes allows the CO to better utilize bandwidth incorporating signal type of both the low bandwidth per port and high number of ports that characterize DCS switches, and the high bandwidth per

port and low number of ports that characterize OXC switches; thus making the network efficiently utilize it's bandwidth as per signal requirements.

In regards to claim 36 Moy teaches the path acknowledge (Moy discloses using the RSVP signaling protocol (paragraph [0102]). RSVP (paragraph [0102]) use acknowledge messages to verify communications) is received by the optical cross-connect and the optical cross-connect then reserves resources (The size of the connection to be created is indicated in the trail creation signal (page 8 paragraph [0110]), which indicates the resources that need to be reserved) for the connection specified by the path setup message (Moy discloses that an optical trail is a connection between two interfaced user devices (IUDs) that includes two TNDs connected to the IUDs on either side of the connection (page 5 paragraph [0056])).

Moy does not explicitly teach DCS or digital-cross-connect in addition to OXCs being using to setup path between ADMs.

Jakobik in the same field of endeavor teaches using DCS or digital-cross-connects (Figure 4, DSC 19) as a path connecter between ADMs in addition to OXCs (column 8 lines 5-10, Signals carrying termination traffic between the express rings 4, 5 and the DCS switch 19 can also be switched directly between the nodes 2, 3 and the DCS switch 19).

It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify Moy's system/method by incorporating the steps of using DCS switches in addition to OXCs to connect ADMs as suggested by Jakobik. The motivation is that (as suggested by Jakobik, column 3 lines 21-40)

using DCS in addition to OXCs to connect Optical Nodes allows the CO to better utilize bandwidth incorporating signal type of both the low bandwidth per port and high number of ports that characterize DCS switches, and the high bandwidth per port and low number of ports that characterize OXC switches; thus making the network efficiently utilize it's bandwidth as per signal requirements.

5. Claim 33 is rejected under 35 U.S.C. 103(a) as being unpatentable over Moy and Jakobik as applied to claim 32 above and further in view of Sandstrom.

Moy and Jakobik teach path setup method via digital cross-connect as described in the rejections of claim 32 above.

Moy and Jakobik do not explicitly teach the connection create command establishes a virtual tributary connection.

Sandstrom in the same field of endeavor discloses SDH/SONET connections by adding or removing the paths formed of virtual-concatenated paths (col. 2, lines 59-65).

At the time the invention was made, it would have been obvious to a person of ordinary skill in the art to dynamically adjust the bandwidth of the optical trails in the invention of Moy by adding or removing virtual-concatenated paths as taught by Sandstrom. One of ordinary skill in the art would have been motivated to do this in order to transport the packets as efficiently as possible in terms of the required bandwidth using Standard based SONET/SDH related virtual tributary connections which enables to efficiently segregate traffic according to service requirements.

6. Claims 27, 28, 30 and 31 are rejected under 35 U.S.C. 103(a) as being unpatentable over Moy, in view of Graves et al. (US PAT 4764921), hereinafter referred to as Graves.

In regards to claims 27, 28, 30 and 31, Moy teaches a method of controlling communication resources in a SONET communication network (figure 2 OTN 4), method including; forming a SONET communication network having a set of add/drop/multiplexers (figure 2 elements 40, 42, 44, 46 and 48 and page 4 paragraph [0048], a plurality of transport network devices (Figure 2, page 4, paragraph [0048] TNDs) that comprise optical cross-connects (Figure 2, page 4, paragraph [0048] OXCs) and add/drop multiplexers (Figure 2, page 4, paragraph [0048] ADMs)) including a first add/drop multiplexers (figure 2 elements 40, 42, 44, 46 and 48 and page 4 paragraph [0048], a plurality of transport network devices (Figure 2, page 4, paragraph [0048] TNDs) that comprise optical cross-connects (Figure 2, page 4, paragraph [0048] OXCs) and add/drop multiplexers (Figure 2, page 4, paragraph [0048] ADMs)) and second add/drop multiplexer (figure 2 elements 40, 42, 44, 46 and 48 and page 4 paragraph [0048]), a plurality of transport network devices (Figure 2, page 4, paragraph [0048] TNDs) that comprise optical cross-connects Figure 2, page 4, paragraph [0048] (OXCs) and add/drop multiplexers (Figure 2, page 4, paragraph [0048] ADMs)) and a plurality of additional add/drop multiplexers (figure 2 elements 40, 42, 44, 46 and 48 and page 4 paragraph [0048], a plurality of transport network devices (Figure 2, page 4, paragraph [0048] TNDs) that comprise optical cross-connects (Figure 2, page 4, paragraph [0048] OXCs) and add/drop multiplexers (Figure 2, page 4, paragraph [0048] ADMs)); forming

a communication connection (page 4 section 0051, links 50, 52, 54, 56, 62, 76 and 78, where each of these internal links is an optical link such as a fiber optic cable) between first add/drop multiplexer (figure 2 elements 40, 42, 44, 46 and 48 and page 4 paragraph [0048]), a plurality of transport network devices (Figure 2, page 4, paragraph [0048] TNDs) and second add/drop multiplexer (figure 2 elements 40, 42, 44, 46 and 48 and page 4 paragraph [0048], a plurality of transport network devices (Figure 2, page 4, paragraph [0048] TNDs) in response to a command from a network management system (page 8 paragraph [0104], an IUD (14) send a trail creation signal to TND (46), which in turn is sent to TND (48)); and modifying communication connection in response to a command from network management system (page 4 section 0152-0153, A modify signal requests the TNC to modify a bandwidth characteristic of an existing optical trail. For example, the modification signal request that the TNC decrease an amount of bandwidth provisioned for an optical trail, or change the priority of an optical trail in relation to other connections) wherein modifying communication connection occurs without determining usage statistics for all of set of add/drop multiplexers in SONET communication network (page 4 section 0152-0153, A modify signal requests the TNC to modify a bandwidth characteristic of an existing optical trail. For example, the modification signal request that the TNC decrease an amount of bandwidth provisioned for an optical trail, or change the priority of an optical trail in relation to other connections The TNC may be configured to grant the requested modification by either changing the existing optical trail in accordance with the request or by deleting the

existing optical trail and creating a new optical trail according to changes specified by the modification signal).

Moy does not explicitly teach the connection being a virtual tributary communication connection and modifying virtual tributary communication connection to become a virtually concatenated virtual tributary communication connection.

Graves in the same field of endeavor teaches the connection being a virtual tributary communication connection and modifying virtual tributary communication connection to become a virtually concatenated virtual tributary communication connection (figure 5, and colun 2, lines 51-65, Figure 5 shows one multiplex frame of 32 virtual tributaries multiplexed together. A method of multiplexing digital signals comprising the steps of: providing p virtual tributaries each comprising t.d.m. frames of information multiplexed in accordance with the method recited above, where p is a plural integer, all of the virtual tributaries having the same t.d.m. frame period and the same number mn of time slots for m words one per channel; each of n consecutive bits; providing a predetermined synchronizing word as a predetermined one of the m words of a predetermined one of the virtual tributaries constituting a synchronizing information tributary; and multiplexing the p virtual tributaries together, one word from each virtual tributary cyclically in turn, to form a multiplexed superframe of word-interleaved virtual tributaries).

At the time the invention was made, it would have been obvious to a person of ordinary skill in the art to modify Moy's system/method by incorporating the steps

of using virtual tributary communication connection and virtually concatenated virtual tributary communication connection as taught by Graves. The motivation is that Virtual concatenation combines several VT channels into bigger virtual pipes to carry higher bandwidth traffic. Such scheme economically benefits network providers by enabling them to provide higher bandwidth traffic cost efficiently.

Allowable Subject Matter

7. Claims 37 and 38 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Response to Arguments

8. Applicant's arguments see pages 15-19 of the Remarks section, filed 1/24/2007, with respect to the rejections of claims 1-28 and 30-38 have been fully considered and are not persuasive.

Claims1-26:

Applicant's argues (see page 15 last paragraph), that *neither Moy nor Sandstrom teach forming a connection without determining usage statistics for all of the switching circuits in a SONET communications network.* However, Examiner respectfully disagrees with the assertion. Moy does teach the cited limitations. Moy specifically teaches (page 4 section 0152-0153) a modify signal requests the TNC to modify a bandwidth characteristic of an existing optical trail (without determining usage

statistics for all of the switching circuits in a SONET communications network). For example, the modification signal requests that the TNC decrease an amount of bandwidth provisioned for an optical trail (without determining usage statistics for all of the switching circuits in a SONET communications network). The TNC may be configured to grant the requested modification by either changing the existing optical trail in accordance with the request or by deleting the existing optical trail and creating a new optical trail according to changes specified by the modification signal (without determining usage statistics for all of the switching circuits in a SONET communications network).

Applicant's argues (see page 17 paragraph 3), that *Sandstrom teaches modifying virtual concatenated paths in response to usage statistics for all of the PTs in tho SONET communiealSon network and further teaches modifying all virtual concatenated paths in the SONET communication network at one time*. However, Examiner points out that Sandstrom reference is not being cited for limitations related to usage statistic. Rather, Sandstrom reference is being used because, Moy fails to expressly disclose the reservation of <u>virtual concatenated resources</u> in modifying an existing connection. Sandstrom in the same field of endeavor disclosing the dynamic adjustment of SDH/SONET connections by adding or removing the paths formed of <u>virtual-concatenated paths</u> (col. 2, lines 59-65). As such Sandstrom reference is not being used to show usage statistics limitation.

<u>Claims 27, 28, 30 and 31:</u>

Applicant argues (see page 18, second and third paragraphs) that *Graves does not teach "forming a virtual tributary communication connection between first add/drop multiplexer and said second add/drop multiplexer in response to a command from a network management system"*. However, Examiner respectfully disagrees with the assertion. Moy in view of Graves do teach the cited limitations. As mentioned in the office action, Moy teaches a plurality of transport network devices (Figure 2, page 4, paragraph [0048] TNDs) that comprise optical cross-connects (Figure 2, page 4, paragraph [0048] OXCs) and add/drop multiplexers (Figure 2, page 4, paragraph [0048] ADMs)); forming a communication connection (page 4 section 0051, links 50, 52, 54, 56, 62, 76 and 78, where each of these internal links is an optical link such as a fiber optic cable) between first add/drop multiplexer (figure 2 elements 40, 42, 44, 46 and 48 and page 4 paragraph [0048]), a plurality of transport network devices (Figure 2, page 4, paragraph [0048] TNDs) and second add/drop multiplexer (figure 2 elements 40, 42, 44, 46 and 48 and page 4 paragraph [0048], a plurality of transport network devices (Figure 2, page 4, paragraph [0048] TNDs) in response to a command from a network management system (page 8 paragraph [0104], an IUD (14) send a trail creation signal to TND (46), which in turn is sent to TND (48)); and modifying communication connection in response to a command from network management system (page 4 section 0152-0153, A modify signal requests the TNC to modify a bandwidth characteristic of an existing optical trail. For example, the modification signal request that the TNC decrease an amount of bandwidth provisioned for an optical trail, or change the priority of an optical trail in relation to other connections) wherein modifying

communication connection occurs without determining usage statistics for all of set of add/drop multiplexers in SONET communication network (page 4 section 0152-0153, A modify signal requests the TNC to modify a bandwidth characteristic of an existing optical trail. For example, the modification signal request that the TNC decrease an amount of bandwidth provisioned for an optical trail, or change the priority of an optical trail in relation to other connections The TNC may be configured to grant the requested modification by either changing the existing optical trail in accordance with the request or by deleting the existing optical trail and creating a new optical trail according to changes specified by the modification signal). Moy does not explicitly teach the connection being a virtual tributary communication connection and modifying virtual tributary communication connection to become a virtually concatenated virtual tributary communication connection. Graves in the same field of endeavor teaches the connection being a virtual tributary communication connection and modifying virtual tributary communication connection to become a virtually concatenated virtual tributary communication connection (figure 5, and colun 2, lines 51-65, Figure 5 shows one multiplex frame of 32 virtual tributaries multiplexed together. A method of multiplexing digital signals comprising the steps of: providing p virtual tributaries each comprising t.d.m. frames of information multiplexed in accordance with the method recited above, where p is a plural integer, all of the virtual tributaries having the same t.d.m. frame period and the same number mn of time slots for m words one per channel, each of n consecutive bits; providing a predetermined synchronizing word as a predetermined one of the m words of a predetermined one of the virtual tributaries constituting a

synchronizing information tributary; and multiplexing the p virtual tributaries together, one word from each virtual tributary cyclically in turn, to form a multiplexed superframe of word-interleaved virtual tributaries).

Conclusion

9. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Salman Ahmed whose telephone number is (571)272-8307. The examiner can normally be reached on 8:30 am - 5:00 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Hassan Kizou can be reached on (571) 272-3088. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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